

Modelling Jewish Migration: connecting data from funerary inscriptions around the Mediterranean

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1. Background and goals

One of the challenges for the study of ancient history is the fact that archaeological, epigraphic and papyrological evidence is scattered over hundreds of different publications, and that there is no single coherent database that makes the information in these publications accessible from one place. There have been initiatives to create databases related to ancient Jewish history on a smaller scale (Paz 2021)¹ but these databases are all focused on either a particular region or a particular kind of data. In our project, the goal is to identify and explain the mechanisms and underlying structures of Jewish migration in ancient Europe. To answer this and other big questions, we created a database of Jewish presence in the ancient world based on published evidence as well as existing datasets. In this paper, we will discuss the creation of this database and the technical questions of data storage.

2. Methods

2.1 Contents of the dataset

For the compilation of the dataset many different corpora and other academic work, books, and papers had to be incorporated. The dataset offers the first large-scale collection of ancient Jewish archaeological sources, currently counting 1966 records. It includes records representing individual or groups of inscriptions, archaeological sites and other sources of textual material, with estimated time periods, information on symbols and materials, the location of the inscriptions, and a translation in English. We enriched information on locations with geo-coordinates, using the Pleiades gazetteer of ancient place names² where available, or by adding coordinates manually. The inspiration for this dataset came from similar projects that use the combination of archaeology and Digital Humanities to answer big questions. The ORBIS project from Walter Scheidel provided us with a starting point, which gave us the idea to come up with a way to visualize networks and migration (Scheidel 2013 and 2015).³ The projects of Pieter Houten (2021) and Jonathan Prag et al. (2018)⁴ provided the project with more inspiration on the inclusion of datasets that underlie these visualizations. The main take-away from this is that the inclusion of data driven approaches into historical research results in a methodology that can provide us with answers to big questions that historical (literary) sources on their own are not able to answer. Moreover, the

¹ <https://peace.sites.uu.nl/>

² <https://pleiades.stoa.org/>

³ <https://orbis.stanford.edu/>

⁴ <http://sicily.classics.ox.ac.uk/>

interdisciplinary approach has proved fruitful, providing us with the start of a new interesting geo-spatial platform for modelling potential Jewish migration.

2.2 Data model

The dataset mainly concerns epigraphical data, and for this purpose EpiDoc⁵ is a widely-used standard. However, we opted not to use this standard because the format focuses on the textual contents of inscriptions, and for a database where metadata is the main focus a document-based format like EpiDoc is less suited. As an alternative we explored storing the data as linked data in RDF format, but doing so would mean that we had to spend a lot of work creating an editing interface. Other reasons not using RDF were the relative simplicity of the data and the fact that there is currently no widely adopted linked data ontology for epigraphical data (see also Prag and Chartrand, 2018: 248-249). The main advantages that linked open data come with, including flexibility in the data model and the possibility for our data to be incorporated in other data sets, would therefore not prove their worth. Instead, we decided to store the data as a relational database that can be manipulated in a user-friendly way using the standard admin interface of the Django framework for web applications.⁶ Links to other databases, including Pleiades for location data, are preserved in this database. The data can be downloaded and accessed by external applications using a JSON REST API.

2.2 Search and visualization

To make the data accessible for a larger audience of researchers, but also to facilitate our own research, we make it available for exploration through the web application I-Analyzer (Janssen et al., 2023). This makes it possible to perform full-text search and filter inscriptions. To highlight patterns of migration, we implement visualization of inscription locations on an interactive map. Initial experiments show that this is of great help in finding large-scale patterns in Jewish history in antiquities.

3. Results

We are currently implementing the interactive map and completing the dataset compilation. As for now, we can see patterns emerging from the dataset alone. These patterns come forth from an early version of the dataset as discussed in Dingemans (2023), in which he retrieved provisional patterns. These patterns indicated what we were already expecting: the increase of the number of sources throughout the centuries, as well as dispersion throughout the entire Mediterranean basin. The final version of the dataset will be at least twice as large, thus offering the user a sharper picture. Not only will we provide a model in which both academic and popular public can inspect this data for their own research, we will be able as well to identify and explain the mechanisms and underlying structures of Jewish migration into ancient Europe by using the interactive map.

⁵ <https://epidoc.stoa.org/>

⁶ For Django, see <https://www.djangoproject.com/>. The source code for the resulting web application can be found here: <https://github.com/UUDigitalHumanitieslab/jewish-historical-migration>

4. Conclusion

With our project Modelling Jewish Migration, we aim to bridge various gaps in academic debates: 1) we want to further prove the interdisciplinary combination of Digital Humanities and archaeology, to provide an explanation of the Jewish dispersion into Ancient and Medieval Europe. This also brings the future of this combination a lot closer: by succeeding, 2) our project lays the basis for migration studies to be further analysed in an ancient or a medieval context, the compilation of a database for the Medieval sources of Jewish settlement, and the understanding of the dynamics of migration in a pre-modern world. From a more technical side, 3) our project aims to be a methodological contribution as to how epigraphical (meta)data that is currently available in published academic texts can be made available according to the principles of FAIR data and software.

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